

# Short Period Incidence Study of Severe Acute Respiratory Infection

## Year 1 rapid data from 2015-16

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## BACKGROUND

Seasonal and pandemic severe acute respiratory infections (SARI) are major public health threats. Globally, there are large knowledge gaps regarding presentation, cause, treatment and clinical outcomes for critically ill patients with SARI. The capability to initiate coordinated global observational studies to gather this data during a pandemic is very limited, requiring prior approvals and staff preparation. Our aims are to establish a research response capability to investigate descriptive epidemiology and infectious profiles of SARI through an ongoing global observational study.

## METHODS

We report the preliminary results of our first annual SARI observational study. Protocol and case report forms were created through consensus of representatives from global clinical trials groups and using a standardized case-definition of SARI. Data were collected over a 7-day period during peak SARI seasons in respective global regions and entered into a central database. We report recruitment of patients across 5 continents. Data were collected in critical care units where available, or equivalent where resource limitations prohibited specialty units. Data collection was structured in a “tiered” fashion - centres could tailor the intensity of data collection to their needs and capabilities (*Table 1*)

DATA COLLECTED	Tier 0	Tier 1	Tier 2	Tier 3
Inclusion Criteria	✓	✓	✓	✓
Demographics; Onset and Admission	✓	✓	✓	Optional
Treatment; Outcome	✓	✓	✓	
Infectious Respiratory Diagnosis	✓	✓	✓	
Co-Morbidities; Signs and Symptoms		✓	✓	
Complications; Pathogen Testing		✓	✓	
Medication		✓	✓	
Travel History		Additional Info (Optional)		
Animal Exposures				
Treatment; Lab Results: Day 1		DAILY		
Treatment; Lab Results: Day 2		DAILY	DAILY	
Epidemiology			✓	✓

Table 1: Tiered data collection

## RESULTS

We report Tier 0 data from the 2015-16 season here.

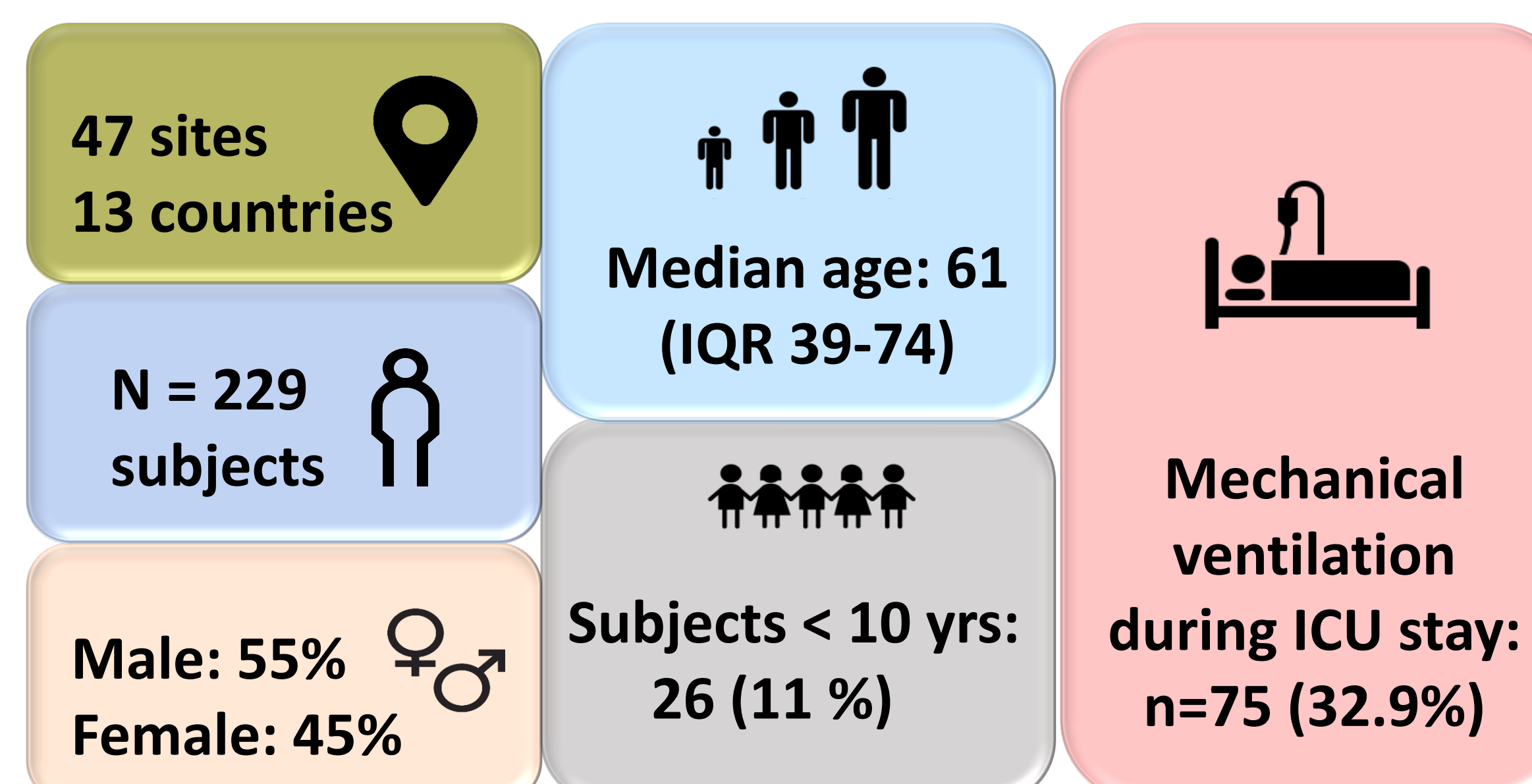


Figure 1: Demographic data

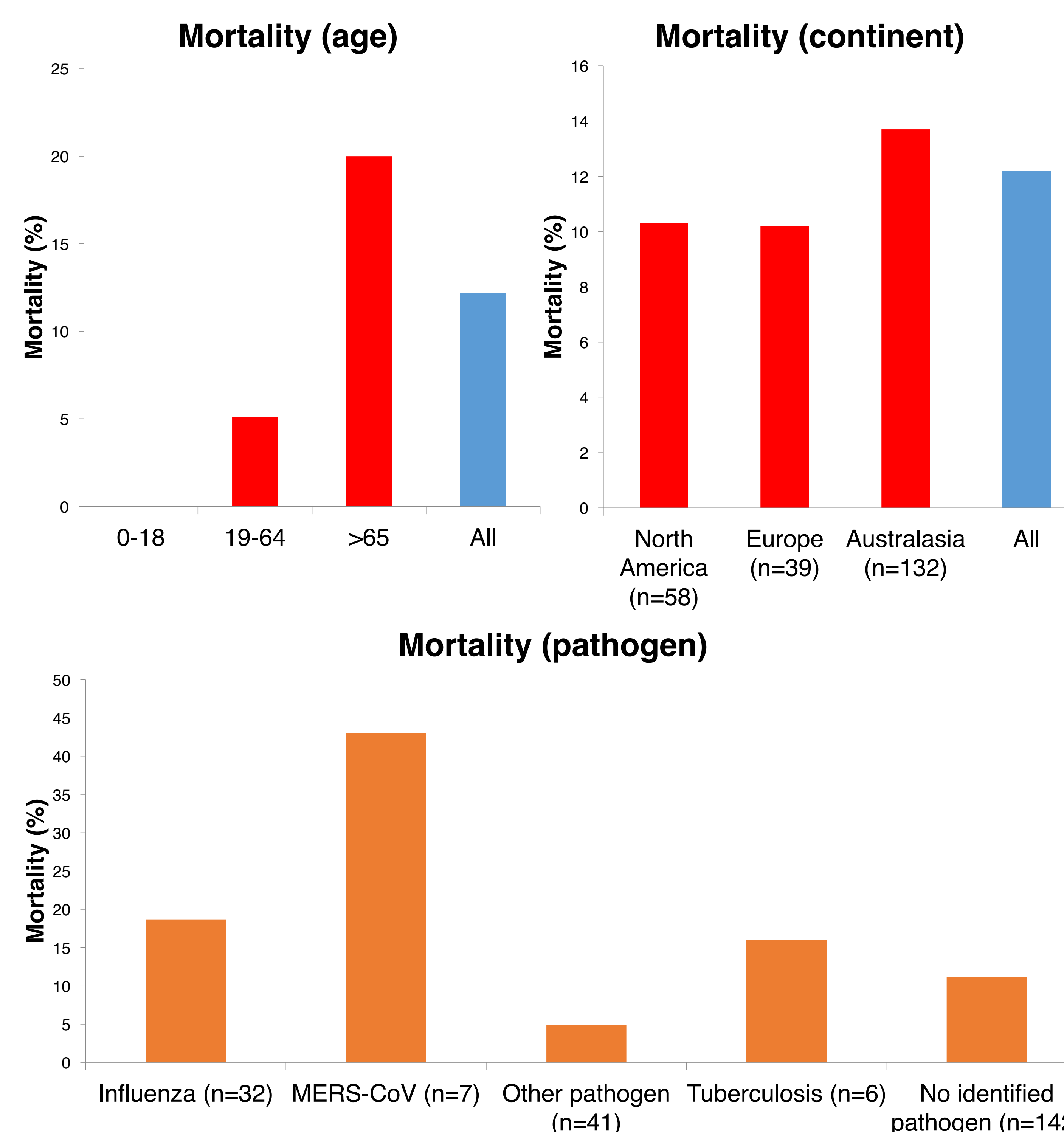


Figure 2: Mortality from SARI by continent, age, and pathogen

## CONCLUSIONS

Through a **Short PeRiod IncideNce sTudy of Severe Acute Respiratory Infection (SPRINT-SARI)**, we are creating a **sustainable infrastructure for real-time data collection** to better describe hospitalized and critically ill patients with SARI. It is **feasible** to rapidly and accurately collect standardised data describing patient demographics, hospital course, diagnoses, and outcomes for diverse patient populations.

- There is heterogeneity of demographics, microbiology, and outcome among critically ill patients with SARI, with the majority of patients having no microbiologic diagnosis.
- This infrastructure can be test-activated by networks and sites to maintain readiness between outbreaks, and can be activated for data collection at the participating sites during a pandemic and fill vital gaps in knowledge. Improvements in scale and data quality, accuracy of denominator projections, and applicability to diverse clinical contexts are underway.
- Further analyses of existing data will incorporate sites with more advanced data capabilities, including co-morbidities and other epidemiologic factors to better understand global mortality patterns from SARI.

## ACKNOWLEDGEMENTS

The SPRINT-SARI team would like to acknowledge the efforts of all local site investigators for collecting and sharing data. Anonymized data provided from networks conducting audit and/or research with local and national Ethics committee/Institutional Review Board approval. Data is shared with due respect to local and international Data Protection Legislation. The SPRINT-SARI team has no conflicts of interest relevant to this work to declare.

**Would you like to learn more or participate in SPRINT-SARI ?**  
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